

Appl. No. *To be assigned*; ; Group Art Unit: *To be assigned*;  
 Dkt. No. 1488.0880003/EKS/PSC; Inventors. Duan *et al*;;  
 Tel: 202/371-2600; Title: Antibodies Directed to ELL2, a  
 New Member of an ELL Family of RNA Polymerase II  
 Elongation Factors (As amended herein);

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1  CAGTGGCGGCGGGTGCAGAAGCCCAAGCAGCGCGGCCGCAGTGGAGGCTAGAGCCGGAGC      60
   -----+-----+-----+-----+-----+-----+
61  GGCGGCGGCGGCGGCACCCCGGGGAGGTTTAAGATGGCGGCGGGGGGACAGGGGGCCTG      120
                                   M A A G G T G G L
121 CGGGAGGAGCAGCGCTATGGGCTGTCGTGCGGACGGCTGGGGCAGGACAACATCACCGTA      180
   -----+-----+-----+-----+-----+-----+
   R E E Q R Y G L S C G R L G Q D N I T V
181 CTGCATGTGAAGCTCACCGAGACGGCGATCCGGGCGCTCGAGACTTACCAGAGCCACAAG      240
   -----+-----+-----+-----+-----+-----+
   L H V K L T E T A I R A L E T Y Q S H K
241 AATTTAATTCTTTTCGACCTTCAATCCAGTTCCAAGGACTCCACGGGCTTGTCAAAATT      300
   -----+-----+-----+-----+-----+-----+
   N L I P F R P S I Q F Q G L H G L V K I
301 CCCAAAAATGATCCCCTCAATGAAGTTCATAACTTTAACTTTTATTTGTCAAATGTGGGC      360
   -----+-----+-----+-----+-----+-----+
   P K N D P L N E V H N F N F Y L S N V G
361 AAAGACAACCCTCAGGGCAGCTTTGACTGCATCCAGCAAACATTCTCCAGCTCTGGAGCC      420
   -----+-----+-----+-----+-----+-----+
   K D N P Q G S F D C I Q Q T F S S S G A
421 TCCAGCTCAATTGCCTGGGATTATACAAGATAAAATTACAGTGTGTGCAACAAACGAC      480
   -----+-----+-----+-----+-----+-----+
   S Q L N C L G F I Q D K I T V C A T N D
481 TCGTATCAGATGACACGAGAAAGAATGACCCAGGCAGAGGAGGAATCCCGCAACCGAAGC      540
   -----+-----+-----+-----+-----+-----+
   S Y Q M T R E R M T Q A E E E S R N R S
541 ACAAAAGTTATCAAACCCGGTGGACCATATGTAGGGAAGAGTGCAAATTCGGAAGCA      600
   -----+-----+-----+-----+-----+-----+
   T K V I K P G G P Y V G K R V Q I R K A
601 CCTCAAGCTGTTTCAGATACAGTTCCTGAGAGGAAAAGGTCAACCCCATGAACCTGCA      660
   -----+-----+-----+-----+-----+-----+
   P Q A V S D T V P E R K R S T P M N P A
661 AATACAATTCGAAAGACACATAGCAGCAGCACCATCTCTCAGAGGCCATACAGGGACAGG      720
   -----+-----+-----+-----+-----+-----+
   N T I R K T H S S S T I S Q R P Y R D R
721 GTGATTCACTTACTGGCCCTGAAGGCCTACAAGAAACCGGAGCTACTTGCTAGACTCCAG      780
   -----+-----+-----+-----+-----+-----+
   V I H L L A L K A Y K K P E L L A R L Q

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FIG.1A

FIG. 1B

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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      L K R E E E I A K L N N S S P N S S G G
1621 GTTAAAGAGGATTGCACTGCCTCCATGGAACCTTCAGCAATTGAACTCCCAGATTATTTG
      -----+-----+-----+-----+-----+-----+
      V K E D C T A S M E P S A I E L P D Y L
1681 ATAAAATATATCGCTATCGTCTCCTATGAGCAACGCCAGAATTATAAGGATGACTTCAAT
      -----+-----+-----+-----+-----+-----+
      I K Y I A I V S Y E Q R Q N Y K D D F N
1741 GCAGAGTATGATGAGTACAGAGCTTTGCATGCCAGGATGGAGACTGTAGCTAGAAGATTT
      -----+-----+-----+-----+-----+-----+
      A E Y D E Y R A L H A R M E T V A R R F
1801 ATCAAAGTATGACACAAAGAAAGCGCCTTTCTCCAGGCTCAAAGAGTATCAGAATGTT
      -----+-----+-----+-----+-----+-----+
      I K L D A Q R K R L S P G S K E Y Q N V
1861 CATGAAGAAGTCTTACAAGAATATCAGAAGATAAAGCAGTCTAGTCCCAATTACCATGAA
      -----+-----+-----+-----+-----+-----+
      H E E V L Q E Y Q K I K Q S S P N Y H E
1921 GAAAAATACAGATGTGAATATCTTCATAACAAGCTGGCTCACATCAAAGGCTAATAGGT
      -----+-----+-----+-----+-----+-----+
      E K Y R C E Y L H N K L A H I K R L I G
1981 GAATTTGACCAACAGCAAGCAGAGTCATGGTCTAGAACTCTGCTTGACCAGAAGATGT
      -----+-----+-----+-----+-----+-----+
      E F D Q Q Q A E S W S *
2041 GAATAAACTTAAGCTTATTTATTTAAAATTCAAATGAGTTGCTCTAGATTCTAAAAGG
      -----+-----+-----+-----+-----+-----+
      TGAAACTTTGGCTGTTGAAAGTTTCAGTATTAGTAACT
2101 -----+-----+-----+-----+-----+-----+

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FIG.1C

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Elongation Factors (As amended herein),

ELL2	79	m a a g g t g g l r e e q r y g l s c g r l l g a d - n i t v l h v k l t e t a i r a l e t y q s h k n l t p f r p s i o f q g l h g l m k t i p k n i d p l n e v h
ELL	75	m l e e d r s y g l s g g r v s d g s k v s v f h v k l t d s a i r a f e s y r a p q d s v s l r p s i r f q g s q g h t i s t i p o p d c p a e a r
ELL2	159	n f n y l s n v g k d n p q g s f d c i i q q t f s s s e a s q l n c l g f i i q d k i t v c a t n d s y q m t r e m t q a e e e s r n i s t k v i k p g g p y
ELL	155	t f s f y l s n i g r d n p q g s f d c i i q q y v s s h g e v h l d c l g s i i q d k i t v c a t d d s y q k a r q s m a d a e e e i r s r s a i v i k a g g r y
ELL2	234	v g k r v q i r k a p q a v s d i t m p e r k r s t i p m n p a n t i r k t h s s ----- s t i l s o r p y r d r v i h l l a l k a m k p e l l a r l o k d g v n
ELL	235	l g k k v q f r k p a p g a t d a v p s r k r a t p i n l a s a i r k s g a s a v s g g s g v s o r p y r d r v i h l l a l r p y r k a e l l r l o k d g l t
ELL2	311	q k d k n s l g a t l q q v a n l n s k d l s y t l k d y f k e l o r d w p g y s e i d r r s l e s v l s r k l n p s q n a t --- g t s r s e s p v c s s r
ELL	315	q a d k d a l d g i l l q q v a n m s a k d g t c t l q d c m y k d v q k d w p g y s e c d d o q l l k r v l v r k l c a p q s t g s l l g d p a a s s p p g e r g
ELL2	391	d a v s s p k r l l d s e f t i d p l m n k k a r t i s h l t n r v p p t l n g h l n p t s e k s a g l p l p p a a a i p t p p p l p s t y l p i s h p p q i
ELL	395	r s a s p p k r l l o p p l f i d p l a n k k p r i s h f t o r a q p a v n c k l g v p n g r e a l l p t p g p p a s t d t l s s s t h l p p r l e p p r a d d
ELL2	471	v n s n s p s t p e g r g t q d l p v a l f s a n d s i l y e d a q d k y t s r t s l e t l p p g s v l l k o p k p m e e n h s m s h k s k k s k k h k e
ELL	457	p l o d v s n d l g h s g r d c e h g e a a g p a p t v r l g l p ----- l l t d c a q p s r p h g s p s r s k p k k s k k h k d
ELL2	551	k d q i k k h d i e t e e k e e d l k r e e e i a k l n s s p r s s g g v k e d c t a s m e p s a i e l p d y l t k y i a i v s y e o r q n y k d d f n a e
ELL	532	k e r a a e k p r a q l p d c a p a t h a t p g a p a d t p g l n g t c s ----- v s s v p t s t s e t p d y l l k y a a i s s s e o r q s y k n d f n a e
ELL2	631	y d e y r a l h a r m e t v a r r f i k l d a q r k r l s p g s k e y q n v h e e v l d e y q k i k q s s p n y h e e k y r c e y l h n k l a h i k r l i g e f
ELL	612	y s e y r d l h a r i t e r i t r r f t q l d a q l r q l s o g s e e y e t t r g q i l d e y r k i k k t n t n y s o e k h r c e y l h s k l a h i k r l i a e y
ELL2	640	d q q q a e s w s
ELL	621	d q r q l q a m p

FIG. 2

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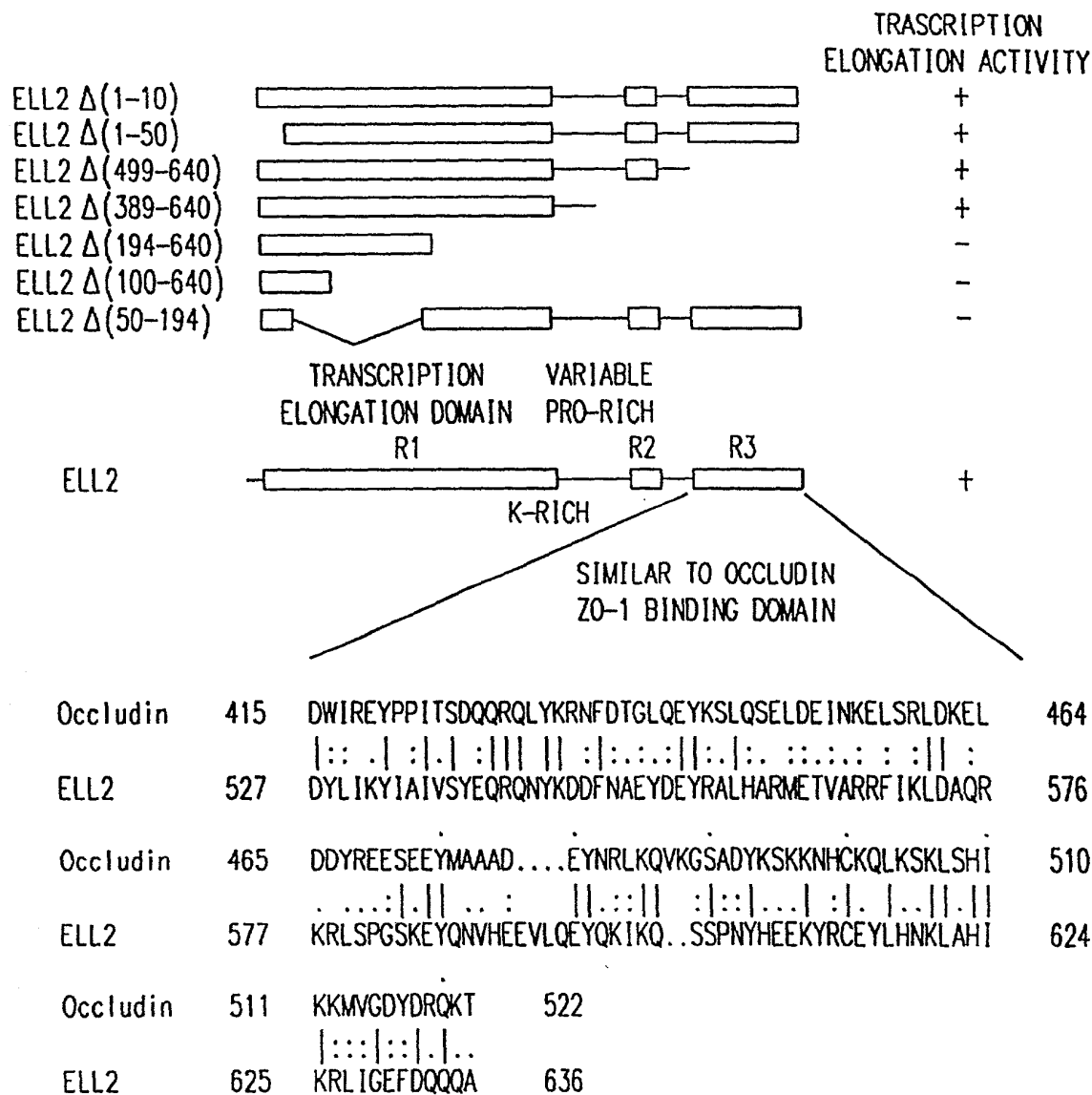


FIG. 3

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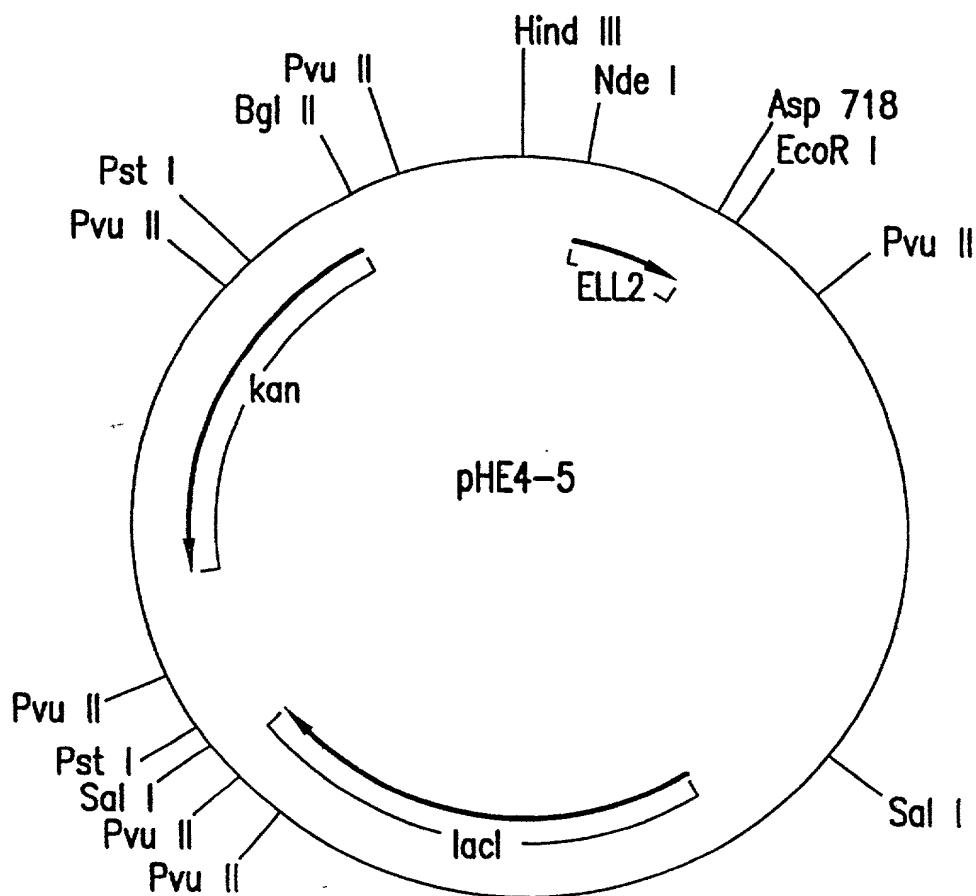


FIG. 4

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-35      Operator 1

AAGCTTAAAAAACTGCAAAAAATAGTTTGACTTGGAGGGGATAACCAAT

-10      Operator 2

50 TAAGATGTACCCGATTGTGAGGGGATAACCAATTTCACACATTAA

S/D

94 AGAGGAGAAATTA CATATG

FIG. 5